

WHAT IS CLAIMED IS

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1. A communication apparatus which communicates with a plurality of wireless terminals, comprising:

an assignment order determination part which determines an assignment order of wireless channels between said communication apparatus and said wireless terminals based on an amount of data to be transmitted from a transmission end for every wireless terminal, and communication quality at a reception end for every wireless terminal; and

a wireless channel assignment part which assigns, according to the thus-determined assignment order, wireless channels between said communication apparatus and said wireless terminals.

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2. A communication apparatus which communicates with a plurality of wireless terminals, comprising:

an assignment order determination part which determines an assignment order of wireless channels between said communication apparatus and said wireless terminals based on a maximum stay time of data to be transmitted from a transmission end for every wireless terminal, and communication quality at a reception end for every wireless terminal; and

a wireless channel assignment part which assigns, according to the thus-determined assignment order, the

wireless channels between said communication apparatus and said wireless terminals.

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3. The apparatus as claimed in claim 2,  
wherein:

when said communication apparatus acts as the  
10 transmission end, said assignment order determination part  
determines the assignment order of the wireless channels  
based on the maximum stay time of the data to be  
transmitted measured in the said communication apparatus,  
and the communication quality measured in each wireless  
15 terminal.

20 4. The apparatus as claimed in claim 2,  
wherein:

when said communication apparatus acts as the  
reception end, said assignment order determination part  
determines the assignment order of the wireless channels  
25 based on the communication quality measured in the said  
communication apparatus, and the maximum stay time of the  
data to be transmitted measured in each wireless terminal.

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5. The apparatus as claimed in claim 2, further  
comprising:

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a wireless terminal classification part which classifies each wireless terminal into a first wireless terminal for which the maximum stay time of the data to be transmitted or the data to be received has exceeded a  
5 predetermined time, or a second wireless terminal for which the maximum stay time of the data to be transmitted or the data to be received has not exceeded the predetermined time; and

wherein said assignment order determination part  
10 gives priority for the first wireless terminals over the second wireless terminals to determine the assignment order therefor, and, also, determines, for said first wireless terminals, the assignment order of the wireless channels by the order of the maximum stay time of the data  
15 to be transmitted or the data to be received, and, then, the order of the communication quality, and, while, determines, for said second wireless terminals, the assignment order of the wireless channels by the order of the communication quality, and, then, the order of the  
20 maximum stay time of the data to be transmitted or the data to be received.

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6. The apparatus as claimed in claim 2,  
wherein:

based on the maximum stay time and the amount of data to be transmitted or the data to be received, and the  
30 communication quality, said assignment order determination part determines the assignment order of the wireless channels.

7. The apparatus as claimed in claim 6, further comprising:

5 a wireless terminal classification part which classifies each wireless terminal into a first wireless terminal for which the maximum stay time of the data to be transmitted or the data to be received has exceeded a predetermined time, or a second wireless terminal for which the maximum stay time of the data to be transmitted or the data to be received has not exceeded the  
10 predetermined time; and

wherein said assignment order determination part gives priority for the first wireless terminals over the second wireless terminals to determine the assignment order therefor, and, also, determines, for said first  
15 wireless terminals, the assignment order of the wireless channels by the order of the maximum stay time of the data to be transmitted or of the data to be received, the order of the communication quality, and, then, the ascending order of the amount of the data to be transmitted or the  
20 data to be received, and, while, determines, for said second wireless terminals, the assignment order of the wireless channels by the order of the communication quality, the ascending order of the amount of the data to be transmitted or the data to be received, and, then, the  
25 order of the maximum stay time of the data to be transmitted or the data to be received.

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8. The communication apparatus as claimed in claim 1, wherein:

said assignment order determination part

determines the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the number of modulation levels corresponding to the communication quality at the reception end for every wireless terminal, instead of determining the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the communication quality at the reception end for every wireless terminal.

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9. The communication apparatus as claimed in claim 2, wherein:

said assignment order determination part determines the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the number of modulation levels corresponding to the communication quality at the reception end for every wireless terminal, instead of determining the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the communication quality at the reception end for every wireless terminal.

10. A method of assigning wireless channels in a communication apparatus which communicates with a plurality of wireless terminals, comprising the steps of:

a) determining an assignment order of wireless

channels between said communication apparatus and said wireless terminals based on an amount of data to be transmitted from a transmission end for every wireless terminal, and communication quality at a reception end for every wireless terminal; and

b) assigning, according to the thus-determined assignment order, the wireless channels between said communication apparatus and said wireless terminals.

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11. A method of assigning wireless channels in a communication apparatus which communicates with a plurality of wireless terminals, comprising the steps of:

a) determining an assignment order of wireless channels between said communication apparatus and said wireless terminals based on a maximum stay time of data to be transmitted from a transmission end for every wireless terminal, and the communication quality at a reception end for every wireless terminal; and

b) assigning, according to the thus-determined assignment order, the wireless channels between said communication apparatus and said wireless terminals.

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12. The method as claimed in claim 11, wherein:  
when said communication apparatus acts as the transmission end, said step a) comprises a step of determining the assignment order of the wireless channels based on the maximum stay time of the data to be

transmitted measured in said communication apparatus, and the communication quality measured in each wireless terminal.

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13. The method as claimed in claim 11, wherein:  
when said communication apparatus acts as the  
10 reception end, said step a) comprises a step of  
determining the assignment order of the wireless channels  
based on the communication quality measured in said  
communication apparatus, and the maximum stay time of the  
data to be transmitted measured in each wireless terminal.

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14. The method as claimed in claim 11, further  
20 comprising the step of:

c) classifying each wireless terminal into a  
first wireless terminal for which the maximum stay time of  
the data to be transmitted or the data to be received has  
exceeded a predetermined time, or a second wireless  
25 terminal for which the maximum stay time of the data to be  
transmitted or the data to be received has not exceeded  
the predetermined time,

wherein said step a) comprises the steps of  
giving priority for the first wireless terminals over the  
30 second wireless terminals to determine the assignment  
order, and, also, determining, for said first wireless  
terminals, the assignment order of the wireless channels  
by the order of the maximum stay time of the data to be

transmitted or the data to be received, and, then, the  
order of the communication quality, and, while,  
determining, for said second wireless terminals, the  
assignment order of the wireless channels by the order of  
5 the communication quality, and, then, the order of the  
maximum stay time of the data to be transmitted or the  
data to be received.

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15. The method as claimed in claim 11, wherein:  
said step a) comprises a step of determining the  
assignment order of the wireless channels, based on the  
15 maximum stay time and the amount of the data to be  
transmitted, and the communication quality,

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16. The method as claimed in claim 15, further  
comprising the step of:

c) classifying each wireless terminal into a  
first wireless terminal for which the maximum stay time of  
25 the data to be transmitted or the data to be received has  
exceeded a predetermined time, or a second wireless  
terminal for which the maximum stay time of the data to be  
transmitted or the data to be received has not exceeded  
the predetermined time; and

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wherein said step a) comprises the steps of  
giving priority to the first wireless terminals over the  
second wireless terminals to determine the assignment  
order therefor, and, also, determining, for said first

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wireless terminals, the assignment order of the wireless channels by the order of the maximum stay time of the data to be transmitted or the data to be received, the order of the communication quality, and, then, the ascending order of the amount of the data to be transmitted or the data to be received, and, while, determining, for said second wireless terminals, the assignment order of the wireless channels by the order of the communication quality, the ascending order of the amount of the data to be transmitted or the data to be received, and, then, the order of the maximum stay time of the data to be transmitted or the data to be received.

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17. The method as claimed in claim 10, wherein:  
said step a) comprises a step of determining the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the number of modulation levels corresponding to the communication quality at the reception end for every wireless terminal, instead of determining the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the communication quality at the reception end for every wireless terminal.

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18. The method as claimed in claim 11, wherein:  
said step a) comprises the step of determining

- the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the number of modulation levels corresponding to the communication quality at the reception end for every
- 5 wireless terminal, instead of determining the assignment order of the wireless channels between said communication apparatus and said wireless terminals based on the communication quality at the reception end for every wireless terminal.